

Case report

Bilateral Non-Hodgkin Lymphoma of Maxillary Sinus with CNS Metastasis

Nabeel Ibraheem Albazah¹, Rafiq Vasiwala², Yogesvaran K³, Yatie Swany Lahuri⁴, Irfan Mohamad⁵

Abstract:

We report an extremely rare case of bilateral Non-Hodgkin lymphoma of maxillary sinus. Although most types of lymphoma have good response to chemotherapy especially in the early stages, our patient demonstrated resistance to the chemotherapy. Spinal metastases resulted in dismal end. The usual R-CHOP regimen was not effective prevent spread even after 4 cycles. Intrathecal CNS prophylaxis as methotrexate is advisable to prevent extension of the disease to the brain and spinal cord.

Keywords: Lymphoma; maxillary sinus; nervous system; intrathecal

*International Journal of Human and Health Sciences Vol. 03 No. 02 April'19 Page : 116-119
DOI: <http://dx.doi.org/10.31344/ijhhs.v3i2.86>*

Introduction:

Malignant lymphomas are classified into Hodgkin lymphoma (HL) and Non-Hodgkin lymphoma (NHL). HL commonly developed in the lymph nodes of the neck and mediastinum, in contrast with NHL, which is commonly seen in extranodal locations. Maxillary sinus was the most frequent location¹. Diffuse large B-cell lymphoma (DLBCL) is the commonest variants of NHL. It is an aggressive, neoplasm of large lymphoid cells. CNS metastasis is very common in DLBCL of paranasal sinuses². The presentations include severe unbearable headache, or lower limbs weakness. When this occur the survival outcome will highly affected.

Case Presentation:

A 66-year-old male presented with painful bilateral cheek swelling and left upper alveolar mass for 2 weeks. It was associated with difficulty in swallowing and left nasal obstruction. He was an active heavy smoker, but non-alcoholic, with no other illness. He was a rubber tapper.

Examination revealed bilateral obvious midface swellings, more prominent on the left (Figure 1).

It was firm in consistency. Endoscopically there was medialization of left lateral nasal wall with obliteration of osteomeatal complex. On the right side the medial maxillary wall also medialized but to lesser extent than the left. Intraoral examination revealed a soft well-defined growth on the left maxillary edentulous alveolar ridge, extending along the left alveolar ridge to the maxillary tuberosity with intact mucosa (Figure 2). The patient has no diplopia, no palpable cervical or axillary nodes.

Computed tomograph (CT) scans revealed enhancing soft tissue density bilateral paranasal masses with subcutaneous extension and intraorbital extension on the left. Biopsy revealed the diagnosis as NHL of DLBCL subtype.

These malignant cells expressed CD45, CD20, BCL2 (strong), CD10, BCL6, focal/weak positivity to MUMI and C-MYC. Proliferative index was 90%. Negative expression was noted for CD3, cyclin D1, panCK, chromogranin A, synaptophysin and NSE. Immunohistochemistry showed that cells were positive for B-cell markers. The patient was referred to hematology team.

1. Department of Otolaryngology, Clinical School of Medicine, International Medical University, Seremban, N. Sembilan, Malaysia
2. Department of Otolaryngology, Clinical School of Medicine, International Medical University, Seremban, N. Sembilan, Malaysia
3. Department of Otolaryngology, Hospital Tuanku Jaafar, Seremban, Negeri Sembilan, Malaysia
4. Department of Otolaryngology, Hospital Tuanku Jaafar, Seremban, Negeri Sembilan, Malaysia
5. Department of Otorhinolaryngology-Head & Neck Surgery, School of Medical Sciences, Universiti Sains Malaysia, Health Campus, Kota Bharu, Kelantan, Malaysia

Correspondence to: Associate Professor Dr Irfan Mohamad, Department of Otorhinolaryngology-Head & Neck Surgery, School of Medical Sciences, Universiti Sains Malaysia, Health Campus, 16150 Kota Bharu, Kelantan, Malaysia. Email : irfankb@usm.my



Figure 1: Bilateral fast growing cheek swelling which were painful



Figure 2: Left maxillary alveolar ridge mass with intact mucosa

CT scan of neck, thorax, abdomen and pelvis revealed no significant cervical or extracervical lymphadenopathy, vertebral or spinal cord metastasis. The disease was staged as stage IE. He was started chemotherapy R-CHOP regimen. After the 3rd cycle the patient had lower limbs weakness and facial asymmetry. He was diagnosed as CVA (acute ischemic hemorrhagic) following an urgent CT brain. MRI brain and spine

confirmed a diffuse leptomeningeal nodularity and lumbosacral intraspinal soft tissue mass favoring spinal metastasis.

After patient had been stabilized, the 4th cycle was given. He was referred to oncologist for radiotherapy in view of spinal infiltration. The patient requested for discharge, which then after a short time patient defaulted and succumbed to the disease.



Figure 3: CT of PNS confirmed the soft tissue density separate masses involving both maxillary sinuses

Discussion:

B-cell lymphomas are made up of over 85% of NHLs, while the rest are from T-lymphocytes and natural killer cells. DLBCL is its commonest subtypes³. It is an aggressive, fast-growing neoplasm of large lymphoid cells, and predominantly occurs in men older than 50 years. About 25% of NHL cases occurred at extranodal sites, like in the skin, gastrointestinal, and CNS⁴. The head and neck extranodal lymphomas are the second most common site after the gastrointestinal tract⁵. Higher incident of sinonasal involvement was noted amongst Asians and South Americans compared to Caucasians⁶.

There are three grades of lymphoma have been defined: indolent (survival of patients with untreated disease is measured in years but still not curable with ordinary therapy), aggressive and highly aggressive (survival of patients with untreated disease is measured in months or weeks but both these variants are curable but rapidly fatal if left untreated or it is not responsive to treatment).⁷

The presentation will be according to the site of origin within the sinonasal tract. It can cause nasal passage obstruction if it is originates in the nasal cavity, facial swelling from the sinuses or the patient can present with epistaxis, cranial

nerve palsies, pain, and proptosis.⁸ In this case the patient presented as bilateral facial swelling and the nasal obstruction was secondary to the medial expansion of the mass to the nasal cavities in addition to that a downward extension which is represented by left side upper gingival mass.

DLBCL is supposed to have a good respond to the chemotherapy but this will depend upon the stage that patient presented for the 1st time and the modality of treatment. Our patient was staged as stage IE (Ann Arbor staging). In a review of 852 cases, the one-year survival rate of sinonasal tract DLBCL was 84.7% and the 5-years survival rate was 68.0%.⁹

Chemotherapy is recommended for the treatment for DLBCL and it is the same as for both nodal and extranodal diseases. The principle is based on that DLBCL of the head and neck is a localized manifestation of systemic disease. In the practice the response of treatment (early presentation) stage I and II DLBCL (not bulky disease) will do well with systemic chemotherapy and may be followed by radiotherapy. The overall prognosis will be better in a more remarkable and disseminated disease. On the other hand, combined chemotherapy is required in patients with advanced-stage (bulky diseases) stage II-IV. For patients with advanced DLBCL, at least 8 cycles of R-CHOP regimen (rituximab, cyclophosphamide, doxorubicin, vincristine and prednisone) should be the standard treatment.¹ In present case its stage IE (bulky diseases) the plan was to give 8 cycles of R-CHOP with possibility of escalation depending on the response followed by radiotherapy to clear the residual neoplastic cells. International Prognostic Index (IPI) was introduced to predict survival and outcome results, in patients with aggressive lymphomas before starting treatment. Even after chemotherapy, certain factors such as age of more than 60, high serum LDH, Ann Arbor clinical stage III or IV, Eastern Cooperative Oncology Group (ECOG) performance status of 2 or more, and more than one sites of extranodal disease sites were significantly correlated with

shorter overall survival. In this system, one point is scored for each feature, giving the total score ranging from 0 to 5. In increasing degrees of risk, IPI score 0 or 1 is low risk, 2 is low-intermediate risk, 3 is high-intermediate risk and IPI score of 4 or 5 is high risk. The IPI of our patient at presentation was 3, which are in high intermediate risk group.

It had been noted that cases with more than one sinus involvement had lower survival rates.⁹ DLBCL was very aggressive and the treatment was inefficient to prevent CNS metastasis depending only on the rituximab, which is not effectively cross blood brain barrier.¹⁰ CNS involvement upstaged the Ann Arbor staging to IV with in less than four months despite the chemotherapy. This patient had a high risk of CNS metastasis. Radiotherapy in combination with chemotherapy is needed to reduce this possibility. Our patient presents the secondary CNS metastasis as leptomeningeal infiltration with coincidently hemorrhagic CVA, which is in certain conditions being the metastatic presentation, which is rarely reported.¹¹ Since the BCL-2 overexpression is associated with drug resistance, it also suggests the prognostic outcome for this case was poor and it needs more attention.¹² Our patient is considered of high-risk group of CNS metastasis due to the massive involvement of paranasal sinuses². This resulted in reducing the life span of the patient. The usual R-CHOP regime constitutes only 0.1% to cross to BBB when given systemically¹³. It is recommended to consider intrathecal Methotrexate, Ara-C, Hydrocortisone or combination of these drugs¹³, unfortunately this was not in the scope of the primary plan.

Conclusion:

DLBCL of paranasal sinuses can be very aggressive and CNS metastasis is very common leading to fatal outcome in a short duration. It is highly recommended to give CNS prophylaxis with intrathecal medication in the commencement of the treatment, radiotherapy should be considered to clear the residual neoplastic cells.

References:

1. Essadi I, Ismaili N, Tazi E, Elmajjaoui S, Saidi A, Ichou M et al. Primary lymphoma of the head and neck: two case reports and review of the literature. *Cases Journal*. 2008;1(1):426.
2. Logsdon M, Ha, CS, Kavadi VS, Cabanillas F, Hess MA, Cox JD. Lymphoma of the nasal cavity and paranasal sinuses: improved outcome and altered prognostic factors with combined modality therapy. *Cancer* 1997;80(3):477-88.
3. Walter C, Ziebart T, Sagheb K, Rahimi-Nedjat R, Manz A, Hess G. Malignant Lymphomas in the Head and Neck Region - a retrospective, single-center study over 41 Years. *Int J Med Sci*. 2015;12(2):141-5.
4. Jayapalan C, Pynadath M, Mangalath U, George A, Aslam S, Hafiz A. Clinical diagnostic dilemma in an uncharacteristic rapidly enlarging swelling of the anterior maxilla: extranodal diffuse large B cell lymphoma. *BMJ Case Reports*. 2016: bcr2015213141.
5. Zou H, Yang H, Zou Y, Lei L, Song L. Primary diffuse large B-cell lymphoma in the maxilla. *Medicine* 2018;97(20):e10707.
6. Szekely E. Follicular and diffuse large B-cell lymphoma-Studies of primary treatment and prognostic factors (Doctoral dissertation). Lund University, Faculty of Medicine 2018.
7. Lombard M, Michel G, Rives P, Moreau A, Espitalier F, Mallard O. Extranodal non-Hodgkin lymphoma of the sinonasal cavities: A 22-case report. *Eur Ann Otorhinolaryngol Head Neck Dis* 2015;132(5):271-4.
8. Zapater E, Bagan JV, Carbonell F, Basterra J. Malignant lymphoma of the head and neck. *Oral Dis* 2010;16(2):119-28.
9. Anand T, Saxena Y, Shashidhar T, Kumar S. primary B cell lymphoma of paranasal sinuses: A diagnostic surprise. *Indian J Otolaryngol Head Neck Surg* 2008;60(3):256-8.
10. Kanumuri VV, Khan MN, Vazquez A, Govindaraj S, Baredes S, Eloy JA. Diffuse large B-cell lymphoma of the sinonasal tract: Analysis of survival in 852 cases. *Am J Otolaryngol* 2014;35(2):154-8.
11. Qiu J, Cui Y, Sun L, Qi B, Zhu Z. Intracranial haemorrhage from metastatic CNS lymphoma: A case report and literature review. *Neurology Asia* 2018;23:69-75.
12. Tsuyama N, Sakata S, Baba S, Mishima Y, Nishimura N, Ueda K et al. BCL2 expression in DLBCL:reappraisal of immunohistochemistry with new criteria for therapeutic biomarker evaluation. *Blood* 2017;130(4):489-500.
13. Meert C, Diereickx D, Vergote V, Verhoef G, Janssens A. CNS prophylaxis in aggressive non-Hodgkin's lymphoma. *Belg J Hematol* 2017;8(6):232-8.